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ABSTRACT

A joint project of the University of Pittsburgh Library System and the School of Library and Information Science investigated the need for a rapid document delivery service within the University Library System (ULS). Two instruments were designed to answer questions about library patrons' uses of bibliographic citations retrieved in online database searches and the patron's need for rapid document delivery. Questionnaires were distributed to 196 people (145 to database search users and 51 to interlibrary load users). Questionnaires were returned by 80 (55.2%) of the search requestors and 33 (64.7%) of the users of interlibrary loan. Several fundamental issues were explored in this project, including: (1) users' perceptions of the meaning of "rapid" in a rapid document delivery system; (2) the likelihood that users would utilize interlibrary loan channels if a rapid document delivery service were available; (3) users' willingness to pay for a rapid document delivery service; and (4) differences between the responses of users of different libraries on campus to issues 2 and 3. Following careful analysis of the study data by appropriate university bodies and other interest groups, a plan to develop a rapid document delivery service will be investigated. Questionnaires, an annotated bibliography, and the project Budget are appended. (THC)

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THE INVESTIGATION OF DEMAND FOR A RAPID DOCUMENT DELIVERY SERVICE FOR THE UNIVERSITY OF PITTSBURGH LIBRARY SYSTEM

Funding for this project provided
by the Council on Library Resources
Grant Number CLR 785-F

February 1, 1985

Dr. K. Leon Montgomery
Jill Seinola
Pamela Vance

IR051579

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University of Pittsburgh

SCHOOL OF LIBRARY AND INFORMATION SCIENCE
Office of the Dean

March 22, 1985

Final Report
Faculty/Librarian Cooperative Research Program
Council on Library Resource
1785 Massachusetts Avenue, N.W.
Washington, DC 20036

Dear Council Members:

RE: Grant Number CLR 785-F

The Investigation of Demand For a
Rapid Document Delivery Service
For the University of Pittsburgh
Library System

We are pleased to submit the final report for this project.

Sincerely,

Dr. K. Leon Montgomery

K. Leon Montgomery 3/22/85

Signature Date

Jill Seinola

Jill Seinola

Signature Date

Pamela Vance

Pamela Vance

Signature Date

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Dr. Donald Shirey, Associate Chair, Interdisciplinary Department of Information Science, School of Library and Information Science;

AND THE LIBRARY USERS WHO COMPLETED AND RETURNED THE QUESTIONNAIRES FOR THIS STUDY.

EXECUTIVE SUMMARY

A joint project between the University of Pittsburgh Library System and the School of Library and Information Science was approved for the fall term (September - December, 1984) under the Faculty/Librarian Cooperative Research Grant Program. The project investigated the demand, as well as the need, for a rapid document delivery service within the University Library System (ULS).

The ULS has been providing wholly subsidized database searching since 1972, when it served as a test site for the New York Times Information Bank. In 1978, DIALOG services were added. The Library Information Retrieval Network (L.I.R.N.) Center was established in 1981. The L.I.R.N. Center provides database searching for DIALOG, BRS, NEXIS, SOC, I.P. Sharp, and VuText. In 1982/83, ten participating libraries conducted 7,483 searches, with 4,700 of these carried out in the L.I.R.N. Center.

Database searches and the printing of a maximum of 100 citations are still free to University of Pittsburgh faculty, students, and staff. The University has subsidized each interlibrary loan (ILL) photocopy since 1982 requiring the library user to pay only $2.00 of the cost. Subsidization of the photocopies has not significantly changed the ILL borrowing patterns. It seemed reasonable to explore whether or not a document delivery plan would benefit the user community.

Several fundamental questions were explored in this project:

1. What is the users' perception of the meaning of "rapid" in rapid document retrieval system?
2. Would users be more likely to utilize interlibrary loan channels if a rapid document delivery service were available?
3. How much would users be willing to pay for a rapid document delivery service?
4. Would the answers to these two questions differ for users of the different libraries on campus?

To explore these questions, questionnaires for two classes of library users, viz., those requesting a database search and those requesting an interlibrary loan photocopy, were developed. To justify the effort and expense required to implement a rapid document delivery service a substantial number of library users would have to assure that they would make use of the service. A carefully chosen sample period, November 5-21, 1984, was used to distribute these questionnaires. Eighty (80) of the one hundred and forty-five (145) database search questionnaires (55.2%) were completed and returned. Thirty-three (33) of the fifty-one (51) of the interlibrary loan photocopy questionnaires (64.7%) were returned.

What is the users' perception of the meaning of "rapid" in rapid document retrieval system? During development and pilot testing of the questionnaires it became clear that the users' perception of "rapid" was twenty-four hours.

Would users be more likely to utilize interlibrary loan channels if a rapid document delivery service were available? Yes. Ninety percent of the seventy-six respondents of the data base search users indicated they would use a twenty-four hour delivery service, whether or not it needed an interlibrary loan. Eighty percent of seventy-seven respondents indicated they would use interlibrary loan and pay a $2.00 fee. Eighty-one percent of the thirty-three interlibrary loan respondents indicated that they would be willing to pay a fee for a twenty-four hour document delivery service.

Would users pay for a rapid document delivery service? Fifty-nine (59) percent of sixty-one database users would pay $2.00 for such a service, and eleven (11) percent would pay $5.00 or more. Eighty-four (84) percent of the twenty-five interlibrary loan users would be willing to pay $2.00. Thirty-two percent would be willing to pay $5.00.

Would the answers to these two questions differ for users of different libraries on campus? Sample sizes for these different libraries were too small to draw valid conclusions.

After careful analysis of the data resulting from the study, a plan to develop a rapid document delivery service is being initiated.

II

Introduction

In the spring of 1984, Pamela Vance and Dr. K. Leon Montgomery received funding from the Council on Library Resources as part of the their Faculty/Librarian Cooperative Research Program. The purpose of the joint project between the School of Library and Information Science and the University Library System was to investigate the demand for rapid document delivery service at the University of Pittsburgh.

The grant recipients viewed this project an opportunity to gather data and make an operational decision about the feasibility for a rapid document delivery system. In addition, the project promised insight for the faculty of the School of Library and Information Science into the question of whether or not library automation systems and networks should be extended to include rapid document delivery system. The grant covered the salary of one graduate student assistant.

The project was carried out during the fall term (September - December) 1984 under the direction of Pamela Vance and Dr. K. Leon Montgomery, with the assistance of Jill Seinola, a Graduate Student Assistant from the School of Library and Information Science.

Methodology

The project team, with the assistance of Dr. Donald Shirey, a faculty member specialising in research from the School of Library and Information Science, designed two instruments to answer questions about library patrons' uses of bibliographic citations retrieved in online database searches and the library patrons' needs for rapid document delivery at the University of Pittsburgh.

The following research questions were posed:

1. Do users restrict their use of bibliographic citations to the University of Pittsburgh collections?

2. Do users seek bibliographic materials from other locally available library collections?

3. Do users utilize interlibrary loan channels if the material is not locally available?

4. Would users utilise interlibrary loan channels if a rapid (3-day, 5-day, 7-day) document delivery service were available?

5. Would users utilise a rapid document delivery service if a fee of $5, $8, or $10 were charged?

6. Would the answers to questions 4 and 5 differ for users of the Chemistry/Physics, Business, Economics, Engineering, Fine Arts, Graduate School of Public and International Affairs, Hillman, Behavioral Sciences, Music, and Library and Information Science libraries?

Two questionnaires were designed to collect data required to respond to these research questions: one administered to a structured sample of database search users, the other to a structured sample of interlibrary loan users.

The questionnaires were designed to gather data about the status, school/department affiliation of the users, and previous use of database and inter-library loan services, as well as the users' perceived need for access to periodical articles obtained within 24 hours of the request and the users' anticipated use of such a service if it were available.

The database search patrons' questionnaire, Appendix A, asked users to indicate how they learned of the database search service and how they planned to use the results of the database search. Interlibrary loan users were asked to indicate if the request for a photocopied periodical article was the result of a computer database search. The interlibrary loan questionnaire is attached as Appendix B.

Questionnaires were distributed to library patrons requesting a database search or interlibrary loan photocopy of a periodical article during the period November 5-21, 1984. This period was selected because typically heavy use of both services is made by library users during the weeks following midterm examinations.

The staff of Hillman Library, which houses the social sciences and humanities collections and the largest library facility on campus, and the departmental libraries in the University Library System participated in distributing and collecting questionnaires. The departmental libraries included: Biological Sciences and Psychology; Buhl; Business; Chemistry; Computer Science; Economics; Engineering; Frick Fine Arts; Library and Information Sciences; Music; Physics, Geology and Planetary Sciences; and Public and International Affairs.

One hundred ninety-six questionnaires were distributed, 145 to database search users and 51 to interlibrary loan users. Eighty database questionnaires, 55.2 percent, and 33 interlibrary loan questionnaires, 64.7 percent, were returned and included in the analysis of need for a rapid document delivery service at the University of Pittsburgh.

Completed questionnaires were returned to the library from which they were obtained, collected and then coded for processing through the Statistical Package for the Social Sciences (SPSS). There was insufficient time for a comprehensive statistical analysis of the data as part of this grant. Further analysis is expected as time and resources permit.

Results of the Database Search Patrons Questionnaire

Q 1: Status

Of the eighty persons returning the database search patrons' questionnaire, the large majority were students, predominantly graduate students.

Table 1: Status

Undergraduate	7 responses	8.75%
Graduate	59 responses	73.75%
Faculty	11 responses	13.75%
Staff	0 responses	0.00%
Other	3 responses	3.75%
TOTAL	80	100.00%

During the two and one-half week survey period, the percentage of users categorized by status was similar to the users of the Library Information Retrieval Network (L.I.R.N.) Access Center in Hillman Library during November 1983.

Table 2: Database Users

Status of Users	Database Search Patrons November 5-21, 1984		L.I.R.N. Patrons November 1-30, 1983	
Undergraduate	7 individuals	8.75%	54 individuals	28.12%
Graduate	59 individuals	73.75%	114 individuals	59.38%
Faculty	11 individuals	13.75%	22 individuals	11.46%
Staff	0 individuals	0.00%	1 individual	.52%
Other	3 individuals	3.75%	1 individual	.52%
TOTAL	80	100.00%	192	100.00%

Q 2: School/Department

Categorised by school/department, respondents from the School of Education made the greatest use of the database search service during the survey period. Other schools/departments which comprised more than ten percent of the total number of database users returning the questionnaire were: the Faculty of Arts and Sciences: Natural Sciences; the Graduate School of Public and International Affairs; and the School of Social Work.

Table 3: School/Department

Faculty of Arts and Sciences: Humanities	4 responses	5.00%
Faculty of Arts and Sciences: Natural Sciences	11 responses	13.75%
Faculty of Arts and Sciences: Social Sciences	2 responses	2.50%
College of General Studies:	1 response	1.25%
College of Arts and Sciences:	6 responses	7.50%
Administration of Justice	2 responses	2.50%
Graduate School of Business	4 responses	5.00%
School of Education	21 responses	26.25%
School of Engineering	3 responses	3.75%
Graduae School of Public and International Affairs	11 responses	13.75%
School of Social Work	8 responses	10.00%
School of Library and Information Science	4 responses	5.00%
School of Nursing	1 response	1.25%
Graduate School of Public Health	1 response	1.25%
No indication	1 response	1.25%
Total	80	100.00%

Q 3: How did you learn about the computer database search service? (Check as many categories as apply.)

Librarians and faculty members are the most frequently cited sources of information about the computer database search service available through the University Library System at the University of Pittsburgh. Librarians in the course of a reference interview frequently discover users whose research interests or needs are appropriate for a database search and recommend that an appointment for a search be made. Students are the third most frequently cited source of information about the computer search service. The total of 116 responses on a return of eighty (80) questionnaires reflects multiple sources.

Table 4: Source(s) of Information about Database Searches

Faculty member's suggestion	35/80	43.75%
Student	27/80	33.75%
Librarian	36/80	45.00%
Newspaper	1/80	1.25%
Information sheet	13/80	16.25%
Other	4/80	5.00%
Total	116	100.00%

Q 4: How many times have you ever requested a University of Pittsburgh library computer database search? (Check one)

Over sixty percent of the respondents indicated that they had previously requested a computer database search. Only 38.8 percent of the survey group was requesting a search for the first time. Currently, faculty, staff and students at the University of Pittsburgh may request up to three database searches per term at no charge to the user.

Table 5: Previous Use of the Database Search Service

This was my first time	31	38.75%
One time before	15	18.75%
Two times before	8	10.00%
Three times before	10	12.50%
Four or more times before	16	20.00%
Total	80	100.00%

Q 5: How do you plan to use the results of this database search? (Check as many categories as apply.)

The most frequently cited uses of the database search results were to locate periodical articles which appear relevant to the user's topic, locate information for research and use the retrieved citations in a bibliography. In other words, database searches are supplementing, and probably supplanting in some instances, the traditional process of manually searching print indexes.

Twenty-one percent of the respondents plan to use the citations to locate information for a doctoral dissertation, not a surprising fact since 73.75 percent of the questionnaires were completed by graduate students. Using the retrieved citations to locate information for a master's thesis was listed by 8.8 percent of the respondents. Only one student indicated that the citations would be used to locate information for a senior thesis.

More than one-third of the respondents plan to use the abstracts/summaries to write a paper for a course. Not only may database searches be supplanting manual searches, but they may also be supplanting traditional research by using abstracts in place of reading the literature which the abstracts summarize.

Table 6: Use of the Results of This Database Search

Use the citations in my bibliography.	32/80	40.00%
Locate the periodical articles which appear relevant to my topic.	59/80	73.75%
Use the citations to locate information for an undergraduate assignment.	5/80	6.25%
Use the citations to locate information for an undergraduate senior thesis.	1/80	1.25%
Use the citations to locate information for a master's thesis.	7/80	8.75%
Use the citations to locate information for a doctoral dissertation.	17/80	21.25%

Table 6: (Cont.)

Use the citations to locate information for faculty research.	13/80	16.25%
Use the citations to locate information for a grant proposal.	10/80	12.50%
Use the citations to locate information for research.	43/80	53.75%
Use the abstracts/summaries to write a paper for a course.	31/80	38.75%
Other	10/80	12.50%

Q 6: If a specific periodical listed in the results obtained from this search was not available at the University of Pittsburgh, would you be likely to request a photocopy of the article through interlibrary loan and pay the $2 fee?

Periodical articles not currently available at the University of Pittsburgh may be requested from other libraries through the University Library System interlibrary loan service. The cost of the photocopies of the periodical articles requested from other libraries is subsidized by the University Library System; a $2.00 fee is charged to interlibrary loan users requesting periodical articles.

Of the seventy-seven persons who responded to question six on the database questionnaire, 80.5 percent indicated they would be likely to request through interlibrary loan a photocopy of a specific periodical article listed in the database search results and pay the $2.00 fee charged per article.

Table 7: Likelihood of Using Interlibrary Loan

Yes	62 responses	80.5%
No	15 responses	19.5%
Total	77	100.00%

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Questions seven through ten on the questionnaire asked for information about the user's willingness to use and/or pay for a rapid document delivery system

which would provide a copy of a specific periodical article listed in the results of the database search within 24 hours of the request.

Q 7: If a specific periodical article listed in the results of this database search could be obtained for you within 24 hours, would you request a copy if the service were free?

Seventy-eight people answered question seven with seventy-six respondents (97.44 percent of the people answering this item) indicating they would use such a rapid document delivery service if the service were free.

Table 8: 24 Hour Periodical Article Service: Free

Yes	76 responses	97.44%
No	2 responses	2.56%
Total	78	100.00%

Q 8: If a specific periodical article listed in the results of this database search could be obtained for you within 24 hours, would you request a copy if you were required to pay a nominal fee for this article?

Of the seventy-six people answering question eight, 90.79 percent indicated they would be willing to pay for the article while 9.2 percent indicated they would not request a copy of the article if they were required to pay a nominal fee.

Table 9: 24 Hour Periodical Service: Nominal Fee

Yes	69 responses	90.79%
No	7 responses	9.21%
Total	76	100.00%

Q 9: If you answered yes to question 8, indicate how much money you would be willing to pay for each periodical article obtained for you within 24 hours of your request.

Sixty-one people indicated the amount of money they would be willing to pay for each periodical article obtained for them within 24 hours of their request. If a fee of $1.00 per article were charged, 91.82 percent of the respondents indicated they would be willing to request and pay for a

periodical article. If a fee of $2.00 per article were charged, 59.03 percent were willing to pay for this service. At $3.00 per article, 22.96 percent were willing to pay the fee; at $4.00 per article 16.40 percent; and at $5.00, 12.50 percent were willing to pay the fee for receiving a periodical article within 24 hours of the request.

Table 10: Amount of Money Willing to Pay Per Article

.50 per article	3	4.92%
.75 per article	2	3.28%
1.00 per article	15	24.59%
1.50 per article	5	8.20%
2.00 per article	19	31.15%
2.50 per article	3	4.92%
3.00 per article	3	4.92%
3.50 per article	3	4.92%
4.00 per article	1	1.64%
5.00 per article	6	9.84%
6.00 per article	1	1.64%
Total	61	100.02%

Q 10: If you answered yes to question 8, indicate the number of periodical articles you would be willing to pay for during a September through August academic year.

Sixty-five answered this question, although only sixty-one were supposed to answer it. The largest number of responses indicated that 43.08 percent would be willing to pay for seven or more periodical articles. Most people would be willing to pay for at least three or four periodical articles during an academic year.

Table 11: Number of Periodical Articles Willing to Pay For During an Academic Year

1-2 periodical articles	2 responses	3.08%
3-4 periodical articles	12 responses	18.45%
5-6 periodical articles	23 responses	35.38%
7 or more periodical articles	28 responses	43.08%
Total	65	100.00%

Q 11: Have you ever requested a periodical article through the library's interlibrary loan department?

In response to this question, twenty-six people indicated that they had requested a periodical article through interlibrary loan. Two-thirds of the respondents had not used the interlibrary loan service to request a periodical article.

Table 12: Used Interlibrary Loan -- Periodical Article

Yes	26 responses	32.5%
No	54 responses	67.5%
Total	80	100.0%

Q 12: If you answered yes to question 11, indicate your degree of satisfaction with the amount of time required for this article to arrive for your use.

The last item on the questionnaire asked those users who had requested a periodical article through interlibrary loan to indicate their degree of satisfaction with the amount of time required for the article to arrive. Of the twenty-six responses, twenty-three or 88.46 percent indicated that they were "very satisfied" or "satisfied".

Table 13: Degree of Satisfaction With the Amount of Time Required for This Article to Arrive

Very satisfied	5 responses	19.23%
Satisfied	18 responses	69.23%
Dissatisfied	1 response	3.85%
Very dissatisfied	1 response	3.85%
No opinion, time is not a factor for me	1 response	3.85%
Total	26	100.01%

Results of the Interlibrary Loan Patrons' Questionnaire

Q 1: Status

Thirty-three interlibrary loan questionnaires were returned during the survey period. Graduate students, 69.7 percent of the respondents, were the largest group to complete and return the interlibrary loan questionnaire. Undergraduate students and faculty members were the other two groups using the service at the University of Pittsburgh during the survey period. Rarely does a staff member or someone not affiliated with the University of Pittsburgh request a periodical article through interlibrary loan in the University Library System.

Table 14: Status

Undergraduate	5 responses	15.15%
Graduate	23 responses	69.70%
Faculty	3 responses	9.09%
Staff	1 response	3.03%
Other	1 response	3.03%
Total	33	100.00%

Q 2: School/Department

Respondents varied by school or department with no single school or department predominating in use of interlibrary loan during the survey period. Schools/departments with the highest frequencies of use included: Faculty of Arts and Sciences: Natural Sciences; Faculty of Arts and Sciences: Humanities; School of Education; and College of Arts and Sciences.

Table 15: School/Department

Faculty of Arts and Sciences: Humanities	5 responses	15.15%
Faculty of Arts and Sciences: Natural Sciences	6 responses	18.18%
Faculty of Arts and Sciences: Social Sciences	3 responses	9.09%
College of General Studies	1 response	3.03%
College of Arts and Sciences	4 responses	12.12%
Administration of Justice	2 responses	6.06%
Graduate School of Business	1 response	3.03%
School of Education	5 responses	15.15%
School of Engineering	2 responses	6.06%
Graduate School of Public and International Affairs	1 response	3.03%
School of Library and Information Science	2 responses	6.06%
Learning Research and Development Center	1 response	3.03%
Total	33	99.99%

Q 3: How many times have you ever used the interlibrary loan service at the University of Pittsburgh? (Check one)

Of the thirty-three responses received, 30.3 percent indicated that this was their first time to use the interlibrary loan service. However, 44.4 percent or almost one-half of the interlibrary loan users had used the interlibrary loan service four or more times prior to their current request.

Table 16: Previous Use of Interlibrary Loan

This was my first time	10 responses	30.30%
1-3 times before	9 responses	27.27%
4-6 times before	7 responses	21.21%
7 or more times	7 responses	21.21%
Total	33	99.99%

Q 4: Was this request for a photocopied periodical article the result of a computer database search? (Check one)

A correlation between interlibrary loan use and database search use exists: 36.36 percent of the respondents positively identified that the current request for a photocopied periodical article was the result of a computer database search. Two people did not answer this question, perhaps because of uncertainty of the definition of "computer database search" which may indicate that this request was not a result of a database search.

Table 17: Interlibrary Loan Request Due to Database Search

Yes	12 responses	36.36%
No	19 responses	57.57%
No response	2	6.06%
Total	33	99.99%

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Question five and six asked for information about the time period required in requesting periodical articles through interlibrary loan.

Q 5: How long did you wait for this article from the time you placed the request until the article was available for your use?

In question five, 42.42 percent, the largest number of responses indicated that eight to fourteen days was required from the time the request was placed until the periodical article was available for use. Over fifty percent of the users waited fifteen or more days for their periodical article while only 6.06 percent waited one to seven days.

Table 18: Time Waited for Periodical Article

1-7 days	2 responses	6.06%
8-14 days	14 responses	42.42%
15-21 days	12 responses	36.36%
22 or more days	5 responses	15.15%
Total	33	99.99%

Q 6: What time period do you consider acceptable for receiving this article requested through interlibrary loan? (Check one)

While most librarians expected users to demand fast access to information, nearly one-half of the respondents indicated that two weeks was an acceptable time period to wait for a requested periodical article to arrive through interlibrary loan. One week was an acceptable period for 27.27 percent while 15.15 percent were willing to wait three weeks for receipt of the article.

Table 19: Acceptable Time Period to Wait For Interlibrary Loan Article

One week	9 persons	27.27%
Two weeks	16 persons	48.48%
Three weeks	5 persons	15.15%
Other	3 persons	9.09%
Total	33	99.99%

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Questions seven through twelve asked for information about the user's willingness to use and pay for the convenience of receiving a copy of the periodical article requested within 24 hours.

Q 7: Would you be willing to pay for the convenience of receiving a copy of this periodical article if the article could be obtained for you within 24 hours? (Check one)

Of the thirty-three responses to question seven, 81.81 percent of the respondents indicated they would be willing to pay for the convenience of 24 hour access to the periodical article they had requested.

Table 20: 24 Hour Periodical Service: Fee

Yes	27 responses	81.81%
No	6 responses	18.18%
Total	33	99.99%

Q 8: If you answered yes to question 7, indicate how much money you would be willing to pay for each periodical article obtained for you within 24 hours of your request.

Twenty-five people responded to this question with 84.00% percent indicating they would pay the current $2.00 or more for each periodical article obtained within 24 hours. Thirty-two percent were willing to pay $5.00 or more per article.

Table 21: Amount of Money Willing to Pay Per Article

1.00 per article	4 responses	16.00%
2.00 per article	4 responses	16.00%
3.00 per article	4 responses	16.00%
4.00 per article	3 responses	12.00%
4.50 per article	2 responses	8.00%
5.00 per article	6 responses	24.00%
6.00 per article	1 response	4.00%
7.00 per article	1 response	4.00%
Total	25	100.00%

Q 9: If you answered yes to question 7, indicate the number of periodical articles you would be willing to pay for during a September through August academic year.

Twenty-five answered this question although only twenty-one were supposed to answer it. Responses were evenly divided with no clear indication of expected use of a service which would provide access to periodical articles within 24 hours of receiving a user's request.

Table 22: Number of Periodical Articles Willing To Pay For During an Academic Year

1-2 periodical articles	6 responses	24.0%
3-4 periodical articles	7 responses	28.0%
5-6 periodical articles	6 responses	24.0%
7 or more periodical articles	6 responses	24.0%
Total	25	100.00%

Q 10: Would you have requested a copy of this periodical article if it could have been obtained for you within 24 hours and if the service were free?

Not surprisingly, 82.76 percent of the twenty-nine users who answered question ten indicated they would have requested a copy of the periodical article received if it could have been obtained for them within 24 hours and if the service were free. Surprisingly, five people who would have paid the $2.00 interlibrary loan fee for periodical articles responded that they would not have requested this periodical article if it could have been obtained within 24 hours at no cost to the user. Perhaps the user ultimately discovered the article was not relevant to his/her information needs.

Table 23: 24 Hour Periodical Article Service: Free

Yes	24 responses	82.76%
No	5 responses	17.24%
	29	100.00%

Q 11: If this periodical article could have been obtained for you within 24 hours, would you have requested a copy if the cost were paid by a grant or some source not your own?

Thirty-one people answered this question with seventy-one percent indicating that they would have requested the article if the cost were paid by a source not their own, 16.1 percent would not have requested the article and 12.9 percent were not certain.

Table 24: 24 Hour Periodical Service: Cost Paid by Source Not Their Own

Yes	22 responses	70.97%
No	5 responses	16.13%
Not certain	4 responses	12.90%
	31	100.00%

Q 12: If you answered yes to question 11, indicated how much money from sources not your own you would be willing to pay for each periodical article obtained within 24 hours for you.

The last question in the interlibrary loan survey asked those respondents who were willing to spend grant or other funds not their own to indicate the amount of money they would be willing to pay to receive a periodical article within 24 hours of their request. Seventeen users answered this question, with responses similar to those of question eight: approximately thirty-five percent would be willing to pay $5.00 or more from sources not their own for each periodical article obtained within 24 hours.

Table 25: Amount of Money Willing To Pay Per Article: Sources Not One's Own

1.50 per article	2 responses	11.76%
2.00 per article	4 responses	23.53%
3.00 per article	3 responses	17.65%

3.50 per article	1 response	5.88%
4.00 per article	1 response	5.88%
5.00 per article	4 responses	23.53%
5.50 per article	1 response	5.88%
10.00 per article	1 response	5.88%
	17	99.99%

Note that in question seven, 81.81 percent of thirty-three respondents were willing to pay for the convenience of receiving a copy of the requested periodical article if the article could be obtained within 24 hours. In question ten, 82.76 percent of twenty-nine respondents would have used such a rapid document delivery service if it were free. In question 11, 70.97 percent of the thirty-one respondents would have used such a service if the costs were paid by a grant or some other source not their own. People completing the interlibrary loan questionnaire indicated they would be most likely to use such a service if it were free, but they they would be more likely to spend their own money than grant or other funds not their own to pay for the cost of the service.

Conclusions From the Survey

In response to the six research questions posed initially, the library users completing the questionnaires indicated that they do not restrict their use of bibliographic citations to the University of Pittsburgh and do seek bibliographic materials from other locally available library collections.

During the 1983-1984 academic year, approximately 1300 interlibrary loan requests for photocopied periodical articles from other libraries originated from users of the University Library System at the University of Pittsburgh. Library users do utilize interlibrary loan channels if the material is not locally available. However, most users are not willing to pay a fee of more than $5.00 per request.

Because of the small size of the sample from each of the departmental libraries, no clear differences based on information needs related to discipline can be identified by the data collected in this research project. It is evident that faculty and students across the University of Pittsburgh campus make use of both the database search service and the interlibrary loan service provided by libraries in the University Library System.

Analysis of the data from the questionnaire and the comments written by the respondents reveals additional information about both the database search service and interlibrary loan service:

Overall, University of Pittsburgh library users are satisfied with current interlibrary loan service for obtaining periodical articles;

Graduate students are the largest group to avail themselves of the free database search service and the interlibrary loan service for requesting periodical articles in the libraries of the University Library System;

While the School of Education students and faculty comprised the largest group of database search users during this survey period, no one school or department can be identified as the predominant group requesting periodical articles through interlibrary loan;

Approximately two-thirds of the survey respondents had used interlibrary loan and/or the free database search service prior to their current request. This indicates that users of these two services are probably experiencing success in locating citations and/or in locating materials from other libraries. Repeated use indicates satisfaction with current services;

Database searches do impact interlibrary loan requests for periodical articles. While the periodical collections at the University of Pittsburgh libraries are extensive, more than one-third of the requests for periodical articles from other libraries were the result of computer database searches;

Fifty-nine or more percent of both database search users and interlibrary loan users agreed that they would be likely to pay the $2.00 interlibrary loan fee for the convenience of receiving a copy of a periodical article within 24 hours of their request. If the service were free, more than 75 percent indicated they would be likely to request a periodical article from another library through interlibrary loan;

When asked to indicate the amount of money they would be willing to pay for each periodical article obtained within 24 hours of the request, both database search users and interlibrary loan users were not willing to pay more than $5.00 per article. Database search users were more unwilling to pay more than the current fee of $2.00 per article than were interlibrary loan users. However, database search users indicated they would be willing to pay for more periodical articles obtained within 24 hours than were interlibrary loan users. Forty-three percent of the database search users indicated they would be willing to pay for seven or more priodical articles during an academic year while 24 percent of the interlibrary loan users indicated they would be willing to pay for that number. Database search users would be willing to pay less for each periodical article obtained within 24 hours of the request but would make greater use of the service than would interlibrary loan users who completed the questionnaire.

The comments and the degree of satisfaction with current interlibrary loan service express that University Library System patrons at the University of Pittsburgh are currently satisfied with both interlibrary loan and database search service. Overall, both groups of users have high praise for these two services.

F.W. Lancaster and E.G. Fayen in 1973 stated, "It would be grossly inefficient if a searcher could obtain citations to relevant documents in a matter of minutes, but was unable to view full copies of the documents cited or could only view them after a long wait or through time-consuming visits to library shelves or filin cabinets." The long waiting period and time-consuming visits still exist in the 1980's.

Results of the Study

This section will present the results of the study in terms of the six questions posed in the proposal.

Research Question One: "Do users restrict their use of bibliographic citations to the University of Pittsburgh collections?"

Users who get their citations from database searches do not limit themselves to the University of Pittsburgh's collections. Over eighty percent of the seventy-seven respondents plan to use other libraries to supply their materials if it is necessary.

Research Question Two: "Do users seek bibliographic materials from other locally available library collections?

This question was not addressed in the research questionnaire. In preparing for the study it was determined that experienced researchers and the Interlibrary Loan Office systematically refer to the Carnegie-Mellon University Library. In addition, the question proved not to be central to the decision of whether or not to implement a rapid document delivery service.

Research Question Three: "Do users utilize interlibrary loan channels if the material is not locally available?

Yes. Eighty percent of the seventy-seven database search users intend to use interlibrary loan if necessary. Thirty-six percent of the thirty-three responding interlibrary loan users utilize this service due to their database search results.

Research Question Four: "Would users utilize interlibrary loan channels if a rapid (3-day, 5-day, 7-day) document delivery service were available?"

Yes. Pilot testing of the questionnaire indicated that twenty-four hours was the critical time factor for rapid document delivery. Money was also a critical factor. It was assumed that researchers might turn away from interlibrary loan because it takes two to three weeks to complete a transaction. This does not seem to be the case. Seventy-two percent of the thirty-three responding interlibrary loan users believe that a two-week or longer period is an acceptable time to wait for an article. Yet, eighty-four percent of the twenty-five respondents were willing to pay at least $2.00 per article to have it delivered within twenty-four hours. Ninety-one percent of the sixty-one database search patrons were willing to pay $1.00 or more for twenty-four hour service.

Research Question Five: "Would users utilize a rapid document delivery service if a fee of $5.00 or $10.00 were charged?"

From among the database users, sixty-one people indicated the amount of money they would be willing to pay for each periodical article obtained for them within 24 hours of their request. If a fee of $1.00 per article were charged, 91.82 percent of the respondents indicated they would be willing to request and pay for a periodical article. If a fee of $2.00 per article were charged, 59.03 percent willing to pay for this service. At $3.00 per article, 22.96 percent were willing to pay the fee; at $4.00 per article 16.40 percent; and at $5.00, 12.50 percent were willing to pay the fee.

From among the interlibrary loan users, twenty-five people responded to this question with 84.00% percent indicating they would pay the current $2.00 or more for each periodical article obtained within 24 hours. Thirty-two percent were willing to pay $5.00 or more per article.

Assessing all the data, the magic break point number seems to be $2.00 for the large majority of users. Ten percent of the respondents were willing to pay $5.00 or more.

Research Question Six: "Would the answers to question 4 and 5 differ for users of the Chemistry/Physics, Business, Economics, Engineering, Fine Arts, Graduate School of Public and International Affairs, Hillman, Behavioral Sciences, Music, and Library and Information Science libraries?

The duration of the project was too short to produce a valid sample size from each of the departmental libraries.

Decisions

The immediate purpose of the survey was to determine the demand for rapid document delivery. The key questions in the project which determine this demand are:

1. Do users utilize interlibrary loan channels if the material is not locally available?

2. Would users utilize a rapid document delivery service if a fee of $5.00, $8.00 or $10.00 were charged?

In the Database Questionnaire, eighty percent of the seventy-seven users indicate that they would pursue an interlibrary loan photocopy if the article they needed was not available locally. Eleven percent of the sixty-one surveyed in the Database Questionnaire would be willing to pay $5.00 to $6.00 an article. In 1983/84, there were 8,382 database searches in the University Library System; therefore, the group willing to pay $5.00 to $6.00 is 962 individuals.

In the Interlibrary Loan Quesionnaire, thirty-two percent of those surveyed indicated a willingness to pay at least $5.00 per article. There were 1,297 interlibrary loan photocopy requests in 1983/84; therefore, 415 individuals from the interlibrary loan user's group would be willing to pay $5.00.

Although the percentages from each group look small, especially in the database group, the actual number of individuals indicating a willingness to pay for rapid service is quite substantial. Thirteen hundred and seventy-seven (1377) individuals are potential customers for rapid document delivery.

In order to provide the service to these users, the University would have to subsidise each transaction. If the average cost of each request is $8.50 (based on the average of the costs of ten commercial vendor prices), and if there were 1,500 requests, the cost for requests provided by commercial vendors would be $12,750.00. If the user would pay half the cost, the University would have to budget $6,375.00 for the actual document delivery. If the user would pay $5.00, the library would have to budget $5,250.00 for the service.

The sample for this project was made up of current users of the database services and interlibrary loan services. There is no information from the community of users who do not use or have never heard of database searching or interlibrary loan. Academic researchers who need information quickly may bypass traditional library services. The introduction of a rapid document delivery service may bring more of this group into the library. Based on the results of the study, and the potential of additional library users, we recommend that a rapid document delivery service be implemented.

At the University of Pittsburgh, the Associate Provost and Director of University Libraries has decided that the findings are meaningful enough to try to initiate a new service. She will ensure that this program gets included in budget, planning and priorities discussions as soon as possible. Before any program can be implemented, the findings of the study will have to be discussed by library councils, the University Senate Library Committee, and other appropriate interest groups.

The School of Library and Information Science has learned through this study that rapid document delivery is an important consideration in the design and use of database searching systems. This result has two dimensions that can be utilized in teaching various courses. One is the changing habits and expectations of end users vis-a-vis document delivery. The other dimension is the necessary extension of library automation systems in general and the interlibrary periodical systems in particular to include "rapid" document delivery hardware and software. The data from this study indicate that institutions with four-year undergraduate programs don't need a rapid document delivery service. Those institutions supporting graduate education or research would find a demand for such a service. The introduction of a rapid document delivery service would give these institutions the opportunity to introduce a new tier of service, which would be both needed and economical. These universities would also have an edge in an increasingly competitive market.

This study has shown that there is a need for a rapid document delivery service at the University of Pittsburgh. The study also raised other questions, and further studies to answer these questions would be valuable to library planners. Among these questions are: is it cost-effective to automatically compare machine-readable database search results with University and regional holdings to further simply the user's quest; and should articles being published only in "machine-readable" form be included.

Appendix A

UNIVERSITY OF PITTSBURGH
UNIVERSITY LIBRARY SYSTEM

Council on Library Resources Project*
November 1984

Instructions to the Database Search Patron:

The University of Pittsburgh Library System is investigating the demand for faster access to full-text periodical articles. As a user of the library's database search service, you have been selected to complete this questionnaire which provides input to the process of redesigning library service. Action will be taken as a result of this study.

A copy of the project description is available for your review in the library and in the office of Mrs. Pamela Vance, Assistant Director for Administrative Services, Hillman Library, University of Pittsburgh.

Answer each question below by placing an "X" in the appropriate box(es). Return this form within one week to the designated location in this library. Replies submitted after November 30, 1984, may not be processes in time to be included in this study.

*This research project is sponsored by the Council on Library Resources, Washington, D.C., under grant number CLR 785-F.

****

Today's Date_____

1. Status (Check one): (1)_____

_____(1)Undergraduate
_____(2)Graduate
_____(3)Faculty
_____(4)Staff
_____(5)Other, please specify_____

2. School/Department_____ (II)____

3. How did you learn about the computer database search service? (Check as many categories as apply.) (III)

_____(1)Faculty member's suggestion (1)_____
_____(2)Student (2)_____
_____(3)Librarian (3)_____
_____(4)Newspaper (4)_____
_____(5)Information sheet (5)_____
_____(6)Other, please specify_____ (6)_____

4. How many times have you ever requested a Univesity of Pittsburgh Library computer database search? (Check one.) (IV)_____

_____(1)This was my first time.
_____(2)One time before.
_____(3)Two times before.
_____(4)Three times before.
_____(5)Four or more times before.

5. How do you plan to use the results of this database search? (Check as many categories as apply.) (V)

_____(1)Use the citations in my bibliography. (1)_____
_____(2)Locate the periodical articles which appear relevant to my topic. (2)_____
_____(3)Use the citations to locate information for an undergraduate assignment. (3)_____
_____(4)Use the citations to locate information for an undergraduate senior thesis. (4)_____
_____(5)Use the citations to locate information for a master's thesis. (5)_____
_____(6)Use the citations to locate information for a doctoral dissertation. (6)_____
_____(7)Use the citations to locate information for faculty research. (7)_____
_____(8)Use the citations to locate information for a grant proposal. (8)_____
_____(9)Use the citations to locate information for research. (9)_____
_____(10)Use the abstracts/summaries to write a paper for a course. (10)_____
_____(11)Other, please specify_____ (11)_____

6. If a specific periodical article listed in the results obtained from this search were not available at the University of Pittsburgh, would you be likely to request a photocopy of the article through interlibrary loan and pay the $2.00 fee? (VI)_____

_____(1)Yes
_____(2)No

7. If a specific periodical article listed in the results of this database search could be obtained for you within 24 hours, would you request a copy if the service were free? (VII)_____

_____(1)Yes
_____(2)No

8. If a specific periodical article listed in the results of this database search could be obtained for you within 24 hours, would you request a copy if you were required to pay a nominal fee for this article? (VIII)_____

_____(1)Yes
_____(2)No

If you answered no to question 8, go to question 11.

9. If you answered yes to question 8, indicate how much money you would be willing to pay for each periodical article obtained for you within 24 hours of your request. (IX)_____

$_____

10. If you answered yes to question 8, indicate the number of periodical articles you would be willing to pay for during a September through August academic year. (X)_____

_____(1)1-2 periodical articles
_____(2)3-4 periodical articles
_____(3)5-6 periodical articles
_____(4)7 or more periodical articles

11. Have you ever requested a periodical article through the library's interlibrary loan service prior to today?

(XI)_____

_____(1)Yes
_____(2)No

12. If you answered yes to question 11, indicate your degree of satisfaction with the amount of time required for this article to arrive for your use.

(XII)_____

_____(1)Very satisfied
_____(2)Satisfied
_____(3)Dissatisfied
_____(4)Very dissatisfied
_____(5)No opinion, time is not a factor for me.

Comments:

Thank you for completing this questionnaire. Please return it to the designated location in the library.

Appendix B

UNIVERSITY OF PITTSBURGH
UNIVERSITY LIBRARY SYSTEM

Council on Library Resources Research Project*
November 1984

Instructions to the Interlibrary Loan Patron:

The University of Pittsburgh Library System is investigating the demand for faster access to full-text periodical articles. As a user of the library's interlibrary loan service, you have been selected to complete this questionnaire which provides input to the process of redesigning library service. Action will be taken as a result of this study.

A copy of the project description is available for your review in the library and in the office of Mrs. Pamela Vance, Assistant Director for Administrative Services, Hillman Library, University of Pittsburgh.

Answer each question below by placing an "X" in the appropriate box(es). Return this form within one week to the designated location in this library. Replies submitted after November 30, 1984, may not be processed in time to be included in this study.

*This research project is sponsored by the Council on Library Resources, Washington, D.C., under grant number CLR 785-F

****

Today's Date_____

1. Status (Check one): (1)

_____(1)Undergraduate
_____(2)Graduate
_____(3)Faculty
_____(4)Staff
_____(5)Other, please specify_____

2. School/Department_____ (II)____

3. How many times have you ever used the interlibrary loan service at the University of Pittsburgh? (Check one.) (III)_____

_____(1)This was my first time.
_____(2)1-3 times before.
_____(3)4-6 times before.
_____(4)7 or more times before.

4. Was this request for a photocopied periodical article the result of a computer database search? (Check one.) (IV)_____

_____(1)Yes
_____(2)No

5. How long did you wait for this article from the time you placed the request until the article was available for your use? (Check one.) (V)_____

_____(1)1-7 days
_____(2)8-14 days
_____(3)15-21 days
_____(4)22 or more days

6. What time period do you consider acceptable for receiving this article requested through interlibrary loan? (Check one.) (VI)_____

_____(1)one week
_____(2)two weeks
_____(3)three weeks
_____(4)Other, please specify_____

7. Would you be willing to pay for the convenience of receiving a copy of this periodical article if the article could be obtained for you within 24 hours? (Check one.) (VII)_____

_____(1)Yes
_____(2)No

If you answered no to question 7, go to question 10.

8. If you answered yet to question 7, indicate how much money you would be willing to pay for each periodical article obtained for you within 24 hours of your request. (VIII)____

$_____

9. If you answered yes to question 7, indicate the number of periodical articles you would be willing to pay for during a September through August academic year. (IX)____

____(1)1-2 periodical articles
____(2)3-4 periodical articles
____(3)5-6 periodical articles
____(4)7 or more periodical articles

10. Would you have requested a copy of this periodical article if it could have been obtained for you within 24 hours and if the service were free? (X)____

____(1)Yes
____(2)No

11. If this periodical article could have been obtained for you within 24 hours, would you have requested a copy if the cost were paid by a grant or some other source nor your own? (XI)____

____(1)Yes
____(2)No
____(3)Not certain

12. If you answered yes to question 11, indicate how much money from sources not your own you would be willing to pay for each periodical article obtained within 24 hours for you. (XII)____

$_____

Comments: (Use reverse side)

Thank you for completing this questionnaire. Please return it to the designated location in the library.

SELECTED BIBLIOGRAPHY

Anthony, L.J. "Document Delivery Systems." Online 6 (March 1982): 76-77.

ADONIS, the document delivery system proposed by European publishers and the British Library Lending Division, planned converting existing journal text to digital form. This article presents an overview of the studies planned to implement such a document delivery system.

Broad, William J. "Journals: Fearing the Electronic Future." Science 216 (May 1982): 964-968.

Comtex Scientific's plan to produce a line of electronic journals for biomedicine is challenged by the Council of Biology Editors. The issue of quality in electronic publishing is raised.

Brownrigg, Edwin B. and Lynch, Clifford A. "Online Catalogs: Through a Glass Darkly." Information Technology and Libraries 2 (March 1983): 109-111.

Document delivery and electronic publishing are discussed in light of technology and the economic questions facing publishers, libraries and library users.

Document Delivery--Background Papers Commissioned by the Network Advisory Committee. Washington, D.C.: Library of Congress, 1982.

A state-of-the-art review of document delivery technology and the current status and projected future of document delivery are presented.

Gates, Yuri. Electronic Document Delivery: A Study of the Relationship Between User and Technology Options. Leatherhead, Surrey, England: The International Electronic Publishing Research Centre, 1982.

This study was designed to assess user needs for rapid document delivery in scientific, technical and medical fields. Conclusion: initial demand for electronic document delivery service would be small but woult grow with increasing use of online systems.

Lancaster, F.W. and Smith, Linda C. "On-line Systems in the Communication Process: Projections." Journal of the American Society for Information Science 31 (May 1980): 193-200.

This article defines the position of online database systems in the communication process and considers evaluation measures appropriate to document delivery systems.

Martin, Noelene P. and Wood, M. Sandra. "Interlibrary Loan in the Computer Age: the Impact of Online Systems on Document Delivery." Reference Librarian (Fall/Winter 1982): 57-69.

In this issue devoted to reference services and technology, the impact of online services on interlibrary loan and document ordering is discussed.

Martyn, John. "UAP and the New Information Technologies." UNESCO Journal of Information Science Librarianship and Archives Administration 4 (January-March 1982): 38-42.

Document delivery via new applications of electronics is discussed. These applications include facsimile transmission, videodisc, electronic publishing and teletext or videotext.

Maxwell, Robert. "Data Retrieval Systems and International Publishing." ASLIB Proceedings 34 (January 1982): 38-45.

Problems affecting data retrieval in the online industry in Europe are presented. These problems include the demand for document delivery in light of the growth of online bibliographic search services.

Popovich, Marjorie and Miller, Betty. "Online Ordering with Dialorder." Online 5 (April 1981): 63-65.

The considerations involved in ordering documents online are presented citing specific examples from the Dialorder service available through the DIALOG database.

Roth, Gisela I. "Online Document Ordering Systems of Online Vendors." Online Review 6 (June 1982): 243-251.

Four online document ordering systems are compared and the advantages of convenience, speed and location of document suppliers are presented.

Saldinger, Jeffrey. "Full Service Document Delivery: Our Likely Future." Wilson Library Bulletin 58 (May 1984): 639-642.

The author, a marketing representative for Information on Demand, presents five issues of concern to full-service document suppliers and their clients: end user access, ownership of documents versus access to documents, cooperation of document suppliers, technology and speed of access.

Tannehill, Robert S., Jr. "Factors in Document Delivery: An Analysis Based on Experience at Chemical Abstracts Service." Science and Technology Libraries 2 (Summer 1982): 3-25.

Major factors which impact on document delivery are analyzed using data from the Chemical Abstracts Document Delivery Service.

Tenopir, Carol. "Full-Text Databases." In Annual Review of Information Science and Technology. White Plains, NY: Knowledge Industry Publications, 1984 pp. 215-246.

A review of full-text databases is presented. Performance of current services and future trends are discussed.

White, Brenda. "Factors Affecting Documents Delivery Systems: Present and Future." Fifth International Online Information Meeting, 1981: 337-346.

The roles of publishers, authors and users in present and planned document delivery systems are presented.

Wood, James L. "The Chemical Abstracts Service Document Delivery Service." Journal of Chemical Information and Computer Science 22 (May 1982): 81-83.

The Chemical Abstracts Document Delivery Service combines photocopying with interlibrary lending. This article highlights the service and presents information on the types of requests, transmittal services, and copyright status of the documents.

----------. "Document Access in the United States." Interlending Review 6 (January 1978): 6-9.

Computer-based literature searching increases the demand for documents. The issues to be resolved in document access include: central organization for document access, restricted access to some organizations and the diversity of major sources of document supply.

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OFFICE OF THE COMPTROLLER

REPORT

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Washington, D.C. 20036

FINAL FINANCIAL STATEMENT

DOCUMENT DELIVERY SERVICE STUDY

September 1, 1984 thru December 31, 1984

Category	Cumulative Expenses
GSA, TA, TF *	$ 2,250.00
Tuition Rem Benefits * 26%	585.00
Supplies	10.50
Total	$ 2,845.50

Payment & Expenditure Schedule

$2,995.00	Total Payments
2,845.50	Total Expenditures
$ 149.50	Refund

I certify that all expenditures are for appropriate purposes and in accordance wit the agreements set forth in the application and award documents.

Paul Solyan

Paul Solyan,
Comptroller and Assistant Treasurer

EC/kz
5-36060

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